

Claims:

1. A router cutter for cutting panel-receiving grooves in frame or box members, comprising
a shaft for mounting in an electric router,
a cutter having a cutting radius mounted on the shaft, and
a guide bearing having a radius mounted on the shaft,
wherein the difference between the cutting radius and the bearing radius is greater than the bearing radius multiplied by the square root of 2.
2. The cutter of claim 1, wherein the guide bearing is approximately $5/16$ inch in diameter.
3. The cutter of claim 1, wherein the guide bearing is approximately $7/16$ inch in diameter.
4. The cutter of claim 2, wherein the cutting radius of the wing cutter is approximately $11/32$ ".
5. The cutter of claim 3, wherein the cutting radius of the wing cutter is approximately $11/32$ ".
6. The cutter of claim 1, wherein the cutting diameter of the wing cutter is approximately 0.669 ".

7. The cutter of claim 4, wherein the cutter width is approximately 1/4".
8. The cutter of claim 5, wherein the cutter width is approximately 1/8".
9. The cutter of claim 1 wherein the cutter diameter is approximately 17mm and the bearing diameter is approximately 10mm.
10. A method of cutting a groove to receive a panel in a frame having a plurality of members, comprising:
- preparing the frame members by forming joint elements on the end of the frame members,
 - temporarily assembling the frame members into the frame having an inside face,
 - manipulating one of the temporarily assembled frame or a router to cut a continuous groove inside the frame using a router cutter while contacting the inside face of the frame with an arcuate bearing surface having an arcuate radius R with the arc centered on the cutter axis of rotation, wherein the cutting diameter of the router cutter is larger than the product of the radius R multiplied by the square root of 2.
11. A method of cutting a groove to receive a panel in a frame having a plurality of members, comprising:
- preparing the frame members by forming joint elements on the end of the frame members,
 - temporarily assembling the frame members into the frame having an inside face,

manipulating one of the temporarily assembled frame or a router to cut a continuous groove inside the frame using a router cutter while contacting the inside face of the frame with a bearing follower having a radius R , wherein the cutting diameter of the router cutter is larger than the product of the radius R multiplied by the square root of 2.

12. A method of producing a frame and panel structure, comprising:
forming a rectangular panel having a tongue thickness T ,
preparing frame members of appropriate length, and having end structures appropriate to join the frame members into a frame around the panel,
temporarily assembling the frame members into the frame having an inside face,
manipulating one of the temporarily assembled frame or a router to cut a continuous groove inside the frame using a router cutter while contacting the inside face of the frame with a bearing follower having a radius R , wherein the cutting diameter of the router cutter is larger than the product of the radius R multiplied by the square root of 2,
forming radii on the panel corners equal to or slightly larger than the product of the radius R multiplied by the square root of 2 but small enough to insure that there will be panel tongue inside the groove at the frame corners, and
positioning the panel within the frame and permanently assembling the frame.